

Appl. No.: 09/515,674
Amdt. dated: January 12, 2004
Reply to Office Action of November 18, 2003

Patent
Docket No.: 242/199

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

CLAIMS

1. (Currently Amended) A process for increasing the efficiency of data transfers between a client and a server comprising:

identifying data requested by a client;

identifying prefetch data, said prefetch data comprising information not immediately requested by said client;

determining the existence of data redundancies in said prefetch data; and

transmitting a reduced set of prefetch data from the server to the client, said reduced set comprising a smaller memory footprint than said prefetch data.

2. (Original) The process of claim 1 in which determining the existence of said data redundancies is performed by calculating row differences between successive rows in said prefetch data.

3. (Original) The process of claim 2 in which calculating said row differences between successive rows in said prefetch data is performed by identifying identical column values for said successive rows.

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4. (Original) The process of claim 2 in which determining the existence of said data redundancies in said prefetch data is performed by consulting a bitmap corresponding to changes between a first row and a second row of a database table.

a1 5. (Original) The process of claim 4 in which consulting said bitmap is performed by evaluating each bit in said bitmap to determine changes between said first row and said second row.

6. (Original) The process of claim 2 in which determining the existence of said data redundancies in said prefetch data is performed by creating a bitmap corresponding to changes between a first row and a second row of a database table, said bitmap containing bit values for differences in column values between said first and said second rows.

7. (Original) The process of claim 6 in which said first and said second rows are not consecutive rows of prefetch data.

8. (Original) The process of claim 7 in which said bitmap is a multidimensional bitmap.

9. (Original) The process of claim 1 in which determining the existence of said data redundancies in said prefetch data is performed by identifying multiple copies of an item of information in said prefetch data; and

the act of transmitting a reduced set of prefetch data comprises sending a single copy of said item that has not changed between a first row and a second row.

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10. (Original) The process of claim 9 further comprising:

maintaining pointers at said client corresponding to said prefetch data;

pointing multiple ones of said pointers to said single copy in a client cache.

11. (Currently Amended) A computer program product that includes a

a medium usable by a processor, the medium having stored thereon a sequence of instructions which, when executed by said processor, causes said processor to execute a process for increasing the efficiency of data transfers between a client and a server, said process comprising:

identifying data requested by a client;

identifying prefetch data, said prefetch data comprising information not immediately requested by said client;

determining the existence of data redundancies in said prefetch data; and

transmitting a reduced set of prefetch data from the server to the client, said reduced set comprising a smaller memory footprint than said prefetch data.

12. (Original) The computer program product of claim 11 in which determining the existence of said data redundancies is performed by calculating row differences between successive rows in said prefetch data.

13. (Original) The computer program product of claim 12 in which calculating said row differences between successive rows in said prefetch data is performed by

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identifying identical column values for said successive rows.

14. (Original) The computer program product of claim 12 in which determining the existence of said data redundancies in said prefetch data is performed by consulting a bitmap corresponding to changes between a first row and a second row of a database table.

a! 15. (Original) The computer program product of claim 14 in which consulting said bitmap is performed by evaluating each bit in said bitmap to determine changes between said first row and said second row.

16. (Original) The computer program product of claim 12 in which determining the existence of said data redundancies in said prefetch data is performed by creating a bitmap corresponding to changes between a first row and a second row of a database table, said bitmap containing bit values for differences in column values between said first and said second rows.

17. (Original) The computer program product of claim 16 in which said first and said second rows are not consecutive rows of prefetch data.

18. (Original) The computer program product of claim 17 in which said bitmap is a multidimensional bitmap.

19. (Original) The computer program product of claim 11 in which determining the existence of said data redundancies in said prefetch data is performed by identifying multiple copies of an item of information in said prefetch data; and

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the act of transmitting a reduced set of prefetch data comprises sending a single copy of said item that has not changed between a first row and a second row.

20. (Original) The computer program product of claim 19 further comprising:

maintaining pointers at said client corresponding to said prefetch data;

pointing multiple ones of said pointers to said single copy in a client cache.

21. (Original) The computer program product of claim 11 in which said prefetch data comprises information in a database table.

22. (Original) The computer program product of claim 11 in which said prefetch data comprises information associated with a web page.

23. (Currently Amended) A general purpose computer system comprising at least one server and at least one client, said general purpose computer system configured to increase the efficiency of data transfers between said client and said server, comprising:

said client configured to send a request for data;

said server located remote to said client and configured for receiving said request generated by said client station by:

identify data responsive to said request;

identify prefetch data, said prefetch data comprising information not immediately requested by said client;

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a) determine the existence of data redundancies in said prefetch data; and

transmit a reduced set of prefetch data from the server to the client, said
reduced set comprising a smaller memory footprint than said prefetch data.